<u>What is claimed is</u>

1. A method for determining a current supplied by an integrated circuit comprising:

determining a voltage drop across a termination impedance with respect to a reference voltage;

comparing a voltage drop across a first impedance on the integrated circuit with a voltage drop across a second impedance on the integrated circuit; and

processing information obtained in the determining and comparing steps to obtain a value for the supplied current.

2. The method of claim 1 wherein the processing further comprises calculating current in the termination impedance based on information obtained in the determining step.

3. The method of claim 2 wherein the processing further comprises relating current in the termination impedance with a sourcing current supplied by the integrated circuit.

4. The method of claim 1 wherein the comparing further comprises dividing the voltage drop across the first impedance by the voltage drop across the second impedance.

5. The method of claim 1 further comprising determining an impedance value of the first impedance.

6. The method of claim 5 further comprising determining an impedance value of the second impedance.

7. The method of claim 6 further comprising dividing the value of the first impedance by the value of the second impedance.

8. The method of claim 1 further comprising determining the voltage provided by the voltage reference.

9. The method of claim 8 further comprising dividing the value of the voltage drop across the termination impedance by the value of the reference voltage.

10. The method of claim 8 further comprising determining an impedance value of the termination impedance.

11. The method of claim 10 further comprising dividing the value of the reference voltage by the value of the termination impedance.

12. The method of claim 1 wherein the processing further comprises multiplying the values determined in claims 4, 7, 9, and 11.

13. The method of claim 8 further comprising dividing the value of the voltage drop across the first impedance by the value of the reference voltage.

14. The method of claim 8 further comprising dividing the value of the voltage drop across the second impedance by the value of the reference voltage.

15. The method of claim 1 wherein the processing further comprising dividing the values determined in claims 13 and 14.

16. The method of claim 1 wherein the processing further comprising multiplying the values determined in claims 7, 9, 11, and 15.

17. A circuit that determines a current supplied by an integrated circuit comprising:

a sensing impedance disposed on the integrated circuit;

a modulation impedance;

a first measurement device coupled to the modulation and sensing impedances configured to measure voltage drop across each impedance;

a termination impedance;

a second measurement device coupled to the termination impedance configured to measure voltage drop across the termination impedance; and

processing circuitry configured to receive information from the first and second measurement devices and calculate supplied current therefrom.

18. The circuit of claim 17 wherein the first measurement device is an analog to digital converter.

19. The circuit of claim 17 wherein the second measurement device is an analog to digital converter.

20. The circuit of claim 18 wherein the second analog to digital converter further comprises a trimmed voltage reference.

21. The circuit of claim 17 wherein the termination impedance is a precision resistor.

22. The circuit of claim 21 wherein the termination resistor is an external resistor.

23. The circuit of claim 21 wherein the termination resistor is a resistor internal to the integrated circuit.

24. The circuit of claim 17 further comprising a sinking circuit coupled to the modulation resistor.

25. The circuit of claim 17 wherein the supplied current is a modulation current.

26. A circuit that determines a current supplied by an integrated circuit comprising:

a sensing impedance disposed on the integrated circuit;

a modulation impedance;

a first measurement device coupled to the sensing impedance configured to measure a voltage drop across the sensing impedance;

a second measurement device coupled to the modulation impedance configured to measure voltage drop across the modulation impedance;

a termination impedance;

a third measurement device coupled to the termination impedance configured to measure a voltage drop across the termination impedance; and

processing circuitry configured to receive information from the first, second, and third measurement devices and calculate supplied current therefrom.

27. The circuit of claim 26 wherein the first measurement device is an analog to digital converter.

28. The circuit of claim 26 wherein the second measurement device is an analog to digital converter.

29. The circuit of claim 26 wherein the third measurement device is an analog to digital converter.

30. The circuit of claim 26 wherein the second analog to digital converter further comprises a trimmed voltage reference.

31. The circuit of claim 26 wherein the termination impedance is a precision resistor.

32. The circuit of claim 26 wherein the termination impedance is a switched capacitor circuit.

33. The circuit of claim 31 wherein the termination impedance is an external resistor.

34. The circuit of claim 26 further comprising a sinking circuit coupled to the modulation impedance.

35. The circuit of claim 26 wherein the supplied current is a modulation current.